

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) A method for determining the wear to a storage battery by monitoring the state of charge of the storage battery, the method comprising:

identifying a plurality of deep discharge events when a state of charge value for the storage battery is less than a minimum state of charge value specified for the storage battery, wherein only those deep discharge events whose duration exceeds a defined minimum duration are assessed in order to determine the total number;

determining the duration of the plurality of deep discharge events; and

determining a wear variable which characterizes the wear as a function of the total number and the total duration of the plurality of deep discharge events;

wherein the wear variable increases as the total number and the total duration of the deep discharge events increases.

2. (Currently Amended) The method of Claim 1 wherein the wear variable is determined according to a function such that the wear variable increases ~~more than~~ proportionally non-linearly with and at a greater rate than the total number of deep discharge events.

3. (Currently Amended) The method of Claim 1 wherein the wear variable is determined according to a function such that the wear variable increases ~~more than~~ proportionally non-linearly with and at a greater rate than the total duration of the deep discharge events.

4. (Cancelled)

5. (Currently Amended) The method of Claim ~~[[4]]~~ 1 wherein the defined minimum duration is defined as a function of at least one of the ambient temperature and the battery temperature.

6. (Currently Amended) The method of Claim [[4]] 1 wherein the defined minimum duration has a value of between approximately 0.1 and 100 hours at room temperature.
7. (Original) The method of Claim 1 further comprising determining a loss of storage capacity for the storage battery in proportion to the wear variable on the basis of a storage capacity of the storage battery at a previous defined time.
8. (Original) The method of Claim 7 wherein the storage capacity of the storage battery at the previous defined time is the storage capacity of the storage battery when the storage battery was new, and wherein the wear variable at the defined time is set to zero.
9. (Original) The method of Claim 7 further comprising determining a first wear component that is dependent on the total number of identified deep discharge events.
10. (Original) The method of Claim 9 wherein the first wear component has a value of between 0.1% and 50% of the storage capacity of the storage battery at the previous defined time after a first deep discharge event.
11. (Original) The method of Claim 10 wherein the first wear component has a value of between 0.3% and 5% after the first deep discharge event at a battery temperature of approximately 20°C.
12. (Original) The method of Claim 9 wherein the first wear component has a value of between 1% and 20% of the storage capacity of the storage battery at the previous defined time after a first deep discharge event.
13. (Original) The method of Claim 12 wherein the first wear component has a value of between 0.3% and 5% after the first deep discharge event at a battery temperature of approximately 20°C.
14. (Original) The method of Claim 9 further comprising determining a second wear component that is dependent on the total duration of the identified deep discharge events.

15. (Original) The method of Claim 14 wherein the second wear component has a value of between 0.1% and 100% of the storage capacity of the storage battery at the previous defined time after a total duration of 100 hours.

16. (Original) The method of Claim 15 wherein the second wear component has a value of between 0.3% and 5% after a total duration of 100 hours at battery temperatures in the region of 20°C.

17. (Original) The method of Claim 14 wherein the second wear component has a value of between 0.1% and 20% of the storage capacity of the storage battery at the previous defined time after a total duration of 100 hours.

18. (Original) The method of Claim 17 wherein the second wear component has a value of between 0.3% and 5% after a total duration of 100 hours at battery temperatures in the region of 20°C.

19. (Original) The method of Claim 1 wherein the wear variable is determined from the sum of a first wear component that is dependent on the total number of deep discharge events and a second wear component that is dependent on the total duration of the deep discharge events.

20. (Original) The method of Claim 19 wherein the first wear component is calculated from a first function that behaves linearly with regard to the total number of deep discharge events.

21. (Currently Amended) The method of Claim 19 wherein the first wear component is calculated from a first function ~~that behaves more than proportionally to the~~ such that the first wear component increases non-linearly with an increasing total number of deep discharge events, the first wear component increasing at a rate greater than the total number of deep discharge events.

22. (Original) The method of Claim 19 wherein and the second wear component is calculated from a second function that behaves linearly with regard to the total duration of deep discharge events.

23. (Currently Amended) The method of Claim 19 wherein and the second wear component is calculated from a second function ~~that behaves more than proportionally to the~~ such that the second wear component increases non-linearly with an increasing total duration of deep discharge events, the second wear component increasing at a rate greater than the total number of deep discharge events.

24. (Currently Amended) A monitoring device for storage batteries comprising:
a measurement unit for measuring variables which characterize the state of charge of the storage battery;

an evaluation unit for determining the state of charge of the storage battery from the measured variables and for determining the wear of the storage battery using a method comprising:

identifying a plurality of deep discharge events when a state of charge value for the storage battery is less than a minimum state of charge value specified for the storage battery, wherein only those deep discharge events whose duration exceeds a defined minimum duration are assessed in order to determine the total number;

determining the duration of the plurality of deep discharge events; and

determining a wear variable which characterizes the wear as a function of the total number and the total duration of the plurality of deep discharge events;

wherein the wear variable increases as the total number and the total duration of the deep discharge events increases.

25. (Currently Amended) A computer program comprising:

program code means;

wherein the program code means are designed to carry out a method comprising:

identifying a plurality of deep discharge events when a state of charge value for the storage battery is less than a minimum state of charge value specified for the storage battery, wherein only those deep discharge events whose duration exceeds a defined minimum duration are assessed in order to determine the total number;

determining the duration of the plurality of deep discharge events; and

determining a wear variable which characterizes the wear as a function of the total number and the total duration of the plurality of deep discharge events;

wherein the wear variable increases as the total number and the total duration of the deep discharge events increases.